

Chapter F3: Commercial Fishing Valuation

INTRODUCTION

This chapter presents the results of the commercial fishing benefits analysis for the Gulf of Mexico region. Section F3.1 details the estimated losses under current, or baseline, conditions. Section F3.2 presents the expected benefits in the region attributable to the rule. Chapter A10 details the methods used in this analysis. All estimates for the South Atlantic are based on model results from the Mid-Atlantic and the Gulf of Mexico. The extrapolation is based on 3-year average daily flow.

Note that, while results for other regions have been sample weighted, no weighting is needed for the South Atlantic.

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F3-1 BASELINE LOSSES

Table F3-1 provides EPA's estimate of the value of gross revenues lost in commercial fisheries resulting from the impingement of aquatic species at facilities in the Gulf of Mexico region. Table F3-2 displays this information for entrainment. Total annual revenue losses are approximately \$4.1 million, assuming a 3 percent discount rate.

Table F3-1: Annual Commercial Fishing Gross Revenues Lost Due to Impingement at Facilities in the Gulf of Mexico Region				
Species	Estimated Pounds of Harvest Lost	Estimated Value of Harvest Lost (in 2002 dollars)		
		Undiscounted	Discounted Using 3% Discount Rate	Discounted Using 7% Discount Rate
Atlantic croaker	91,455	21,161	19,605	17,833
Black drum	9,667	6,342	5,146	4,015
Blue crab	118,321	76,073	74,364	72,243
Leatherjacket	186,919	197,683	189,984	180,663
Mackerels	722	324	297	267
Menhadens	2,360,839	125,336	117,875	109,018
Other (commercial)	515,805	287,569	270,452	250,130
Sea basses (com. and rec.)	51	27	23	18
Sheepshead	1	0	0	0
Shrimp (commercial)	364,041	847,034	760,460	667,458
Spot	77,236	20,771	19,707	18,470
Stone crab	278,402	401,031	389,903	376,249
Striped mullet	327,826	217,031	198,896	178,241
Other unidentified species (from forage losses)	503	227	204	180
TOTAL	4,331,790	2,200,608	2,046,918	1,874,786

Table F3-2: Annual Commercial Fishing Gross Revenues Lost Due to Entrainment at Facilities in the Gulf of Mexico Region

Species	Estimated Pounds of Harvest Lost	Estimated Value of Harvest Lost (in 2002 dollars)		
		Undiscounted	Discounted Using 3% Discount Rate	Discounted Using 7% Discount Rate
Atlantic croaker	38	9	8	7
Black drum	1,760,386	1,154,817	909,755	683,310
Blue crab	181,744	116,850	110,898	103,708
Leatherjacket	3,697	3,910	3,648	3,339
Menhaden	9,422	500	457	407
Other (commercial)	6,301	3,513	3,208	2,856
Sheepshead	36	12	11	9
Shrimp (commercial)	86,945	202,299	196,407	189,064
Spot	7,207	1,938	1,785	1,611
Stone crab	275,252	396,493	374,264	347,656
Striped mullet	943,400	624,559	555,702	479,376
Other unidentified species (from forage losses)	15,153	6,823	6,144	5,409
TOTAL	3,289,582	2,511,723	2,162,286	1,816,751

F3-2 BENEFITS

As described in Chapter A10, EPA estimates that 0 to 40 percent of the gross revenue losses represent surplus losses to producers, assuming no change in prices or fishing costs. The 0 percent estimate, of course, results in loss estimates of \$0. The 40 percent estimates, as presented in the Table F3-3, total approximately \$1.6 million when a 3 percent discount rate is assumed.

The expected reductions in I&E attributable to changes at facilities required by the rule are 59.0 percent for impingement and 31.9 percent for entrainment. Total annual benefits are estimated by applying these estimated reductions to the annual producer surplus loss. As presented in Table F3-3, this results in total annual benefits of \$0.7 million, assuming a 3 percent discount rate.

Table F3-3: Annual Commercial Fishing Benefits Attributable to Phase II Rule at Facilities in the Gulf of Mexico Region (million 2002\$), Assumes Compliance in 2005

	Impingement	Entrainment	Total
Baseline loss — gross revenue			
Undiscounted	\$2.2	\$2.5	\$4.7
3% discount rate	\$2.0	\$2.1	\$4.1
7% discount rate	\$1.7	\$1.7	\$3.4
Producer surplus lost — low	\$0.0	\$0.0	\$0.0
Producer surplus lost — high (gross revenue * 0.4)			
Undiscounted	\$0.9	\$1.0	\$1.9
3% discount rate	\$0.8	\$0.8	\$1.6
7% discount rate	\$0.7	\$0.7	\$1.4
Expected reduction due to rule^a	59.0%	31.9%	---
Benefits attributable to rule — low	\$0.0	\$0.0	\$0.0
Benefits attributable to rule — high			
Undiscounted	\$0.5	\$0.3	\$0.8
3% discount rate	\$0.5	\$0.3	\$0.7
7% discount rate	\$0.4	\$0.2	\$0.6

^a Estimated based on EPA's assumptions. EPA's assumption about the amount of electricity that will be produced in the future differs very slightly from DOE's. For the Gulf of Mexico region the EPA and DOE estimates are the same.